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eral course and distribution. The conclusions derived from these facts may be modified by the embryonic or the phylogenetic history, which may give evidence that the nerve has reached its observed adult position through secondary shifting or change of course. The point of view is illustrated in the recognition of the ophthalmicus profundus as a separate segmental nerve in spite of its central origin in common with the trigeminus in every vertebrate. Also, in the shifting of the roots of several cranial nerves from segment to segment. Also, in the analysis of the vagus into several segmental nerves because of its peripheral relations. Also, in the recognition of a general cutaneous component in each segmental nerve, including the facialis, although all these components are commingled in a non-segmental central nucleus. The statement made by Allis expresses a profound but not uncommon misconception of the attitude and method of students of nerve components. Without exception these workers would agree with Allis in attaching primary importance to the peripheral course and distribution of nerves, but they would not agree that this is in any way inconsistent with the neurone theory.

What has led Allis to the statement quoted above is the fact that communis fibers have not been recognized as a primary component of the trigeminus as a segmental nerve. He argues in substance as follows: in some fishes communis fibers are distributed by way of the rami of the trigeminus and, generally, cutaneous fibers run in the hyoideo-mandibular ramus of the facialis. In *Amia* and *Petromyzon* cutaneous fibers are present in the root of the facialis. Why should not both communis and cutaneous components be assigned to both trigeminus and facialis? Students of nerve components have assigned the communis fibers to the facialis and the cutaneous fibers to the trigeminus, except where they run in the root of the facialis, on phylogenetic grounds. In forms not provided with an operculum the cutaneous component in the hyoid segment is primitive and has its root and its ganglion cells in the facialis root and

ganglion. In operculated forms (with the single exception of *Amia* so far as known) this cutaneous component in the facialis has disappeared and fibers from the trigeminus have secondarily invaded facialis territory to supply the operculum.

Similarly, in primitive forms no communis fibers have been found in the trigeminus. In fishes in which taste organs are present in the outer skin of the head, such fibers are distributed by way of the trigeminal rami, but they leave the brain in the facialis root and have their ganglion cells in the facialis ganglion. Their distribution is therefore secondary and they belong to the facialis segment. The same is true of the facialis root fibers which go to the fins, or even the tail, to supply taste buds.

It is one advantage of the neurone theory that such cases as this are explained without difficulty, while upon the Hensen hypothesis of primary continuity of nerve cell and end organ, it is inconceivable how taste organs in the skin should have secured a nerve supply at all, since the taste organs in primitive forms were wholly entodermal and the cutaneous nerves did not carry any fibers to innervate them.

J. B. JOHNSTON

SCIENTIFIC JOURNALS AND ARTICLES

The Journal of Biological Chemistry, Vol. VII., No. 2, issued January 8, 1910, contains the following: "Effects of the Presence of Carbohydrates upon the Artificial Digestion of Casein," by N. E. Goldthwaite. The digestion of casein is retarded by the presence of carbohydrates. "The Quantitative Separation of Calcium and Magnesium in the Presence of Phosphates and Small Amounts of Iron Devised Especially for the Analysis of Foods, Urine and Feces," by Francis H. McCrudden. Description of a new method. "A Note on the Estimation of Total Sulphur in Urine," by Stanley R. Benedict. Criticism of Ritson's method. "The Fate of Sodium Benzoate in the Human Organism," by H. D. Dakin. Daily doses of 5 to 10 grams of sodium benzoate for two or three days are eliminated practically quantitatively in the urine as hippuric acid.

An improved method for estimating hippuric acid is described. "A Chemical and Bacteriological Study of Fresh Eggs," by M. E. Pennington. A series of comprehensive chemical analyses of whites and yolks of fresh eggs with the separation and study of the bacteria within them. Thirty-six species were isolated and identified. "Phlorhizin Glycocholia," by R. T. Woodyatt. Under the influence of phlorhizin, dextrose appears in the bile. "The Toxicity of Thallium Salts," by Robert E. Swain and W. G. Bateman. A study of the symptoms which are caused by thallium salts.

THE contents of *Terrestrial Magnetism and Atmospheric Electricity* for December, are as follows: "Exhibit of the Magnetic Work of the Carnegie Institution of Washington, December 13-18, 1909" (Frontispiece); "Some of the Problems of Ocean Magnetic Work," by L. A. Bauer; "Magnetic Storm of September 25, 1909, as Recorded at the Cheltenham Magnetic Observatory," by J. E. Burbank; "Letters to Editor"; "Biographical Sketch of Adolf Erman, 1806-1877"; "Portrait of Adolf Erman"; "Time and Direction at the Poles of the Earth," by W. J. Peters; "Notes"; "Abstracts and Reviews."

SUMMARIES OF SIX OPINIONS (9, 11, 13, 15, 17, 18) BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

THE following summaries of recent opinions by the International Commission on Zoological Nomenclature are published for the information of persons interested in the points in question. It is expected that the full details of the arguments will be published later in connection with certain other cases now under consideration. These summaries do not give the reservations made by certain commissioners, but these reservations will be presented in the final publication.

9. *The Use of the Name of a Composite Genus for a Component Part requiring a Name.*—The decision as to whether the name of a composite genus, when made up wholly of older genera, is tenable for a component part

requiring a name, depends upon a variety of circumstances. There are circumstances under which such name may be used, others under which it may not be used. (Art. 32.)

Vote: Affirmative, 12; negative, 0; not voting, 3.

11. *The Designation of Genotypes by Latreille, 1810.*—The "Table des genres avec l'indication de l'espèce qui leur sert de type," in Latreille's (1810) "Considérations générales," should be accepted as designation of types of the genera in question. (Art. 32.)

Affirmative, 11; negative, 1; not voting, 3.

13. *The Specific Name of the Sand Crab.*—Catesby's (1743) prelinnean name *arenarius* is not available under the code, although "reprinted" in 1771; *quadratus* 1793 is stated to be preoccupied; *albicans* 1802, being the next specific name in the list, becomes valid, under the premises submitted.

Affirmative, 10; negative, 0; not voting, 5.

15. *Craspedacusta sowerbii* Lankester, 1880, n. g., n. sp., vs. *Limnocoedium victoria* Allman, 1880, n. g., n. sp.—*Craspedacusta sowerbii* Lankester, 1880, June 17, has clear priority over *Limnocoedium victoria* Allman, 1880, June 24. Presentation of a paper before a scientific society does not constitute publication in the sense of the code. The commission is without authority to sanction usage in contravention to the provisions of the code.

Affirmative, 15; negative, 0.

17. *Shall the Genera of Weber, 1795, be Accepted?*—Weber's "Nomenclator entomologicus," 1795, complies with the requirements of Article 25, hence the genera in question are to be accepted, in so far as they individually comply with the conditions of the code.

Affirmative, 11; negative, 1; not voting, 3.

18. *The Type of Hydrus Schneider, 1799, 233.*—On the basis of the premises submitted by Dr. Stejneger, *Hydrus caspius* Schneider, syn. *Coluber hydrus* Pallas, is the type of Schneider's genus *Hydrus*, according to Article 30 (d). The fact that Schneider refers to the page and number of this species establishes the point in question and the fact that the name *Coluber hydrus* was not quoted is